

### **DETAILED ACTION**

Applicants reply filed on July 26, 2010 is acknowledged. Claims 58, 62-65, 68, 72-75 are amended and are present for examination.

Objections and rejections are hereby withdrawn.

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Michael Krenicky on September 23, 2010.

Claim 61 (amend). "The cell of claim 60..." to "The cell of claim 58...".

Claim 71 (amend). "The cell of claim 70..." to "The cell of claim 68...".

Claim 73 (replace) The method of claim 68, where the cell in step (a) is mutated in a position within SEQ ID NO: 2, SEQ ID NO: 25 and SEQ ID NO: 4.

Cancel claim 62, 66, 72 and 76.

78. (New) An isolated mutated Bacillus cell, which has a mutation in a gene encoding a polypeptide having at least 95% sequence identity to the polypeptide of SEQ ID NO: 2, SEQ ID NO: 25, or SEQ ID NO:4, wherein said mutation results in reduced expression of said polypeptide where said bacillus cell secretes a higher amount of at least one heterologous polypeptide of interest compared to non-mutated cell.

79. (New) The cell of claim 78, in which the gene is partially or fully deleted from the chromosome.

80. (New) The cell of claim 80, in which the gene comprises at least one frame shift or non-sense mutation.

Claims 58, 61, 63-65, 67-68, 71, 73-75, 77-80 are allowed.

### **REASON FOR ALLOWANCE**

The following is an examiner's statement of reasons for allowance: The closest prior art is the disclosure by Cao et al. (20030233675 A1) or (US7314974). Cao et al teach over-expressing a large number of sequences from *B. subtilis* to be expressed in plants for production of plants with improved properties. SEQ ID NO: 23287 in Cao et al shows 100% identity to the polypeptide SEQ ID NO: 2 in the instant invention. However Cao does not teach a microorganism wherein the reduced expression of the polypeptide of SEQ ID NO: 2 in a native microorganism in view of increasing/enhancing expression of heterologous proteins.

The claims in this application are drawn to mutated bacillus cells (a genus) where these cells have a reduced expression of a polypeptide of SEQ ID NO: 2 or SEQ ID NO: 4 (which are sequences that are from *B. subtilis* and *B. licheniformis* respectively) or sequences that are at least 95% identical to these sequences wherein said cells secret higher amounts of at least one heterologous polypeptide of interest when compared to otherwise non-mutated cells. While the polypeptide of SEQ ID NO: 2 or 4 are postulated to be metal ion regulated their function is not clearly known. However since Applicants show that cells with reduced expression of SEQ ID NO: 2 or SEQ ID NO: 4 secret a

higher level of a recombinant heterologous proteins, one of skill in the art would be able to screen for increased protein secretion in bacillus cells comprising proteins with at least 95% identity to SEQ ID NO: 2 or SEQ ID NO: 4. Therefore claims 58, 61-65, 67-75 and 77 are allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

**Conclusion:** Claims 58, 61, 63-65, 67-68, 71, 73-75, 77-80 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAGNEW H. GEBREYESUS whose telephone number is (571)272-2937. The examiner can normally be reached on 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MANJUNATH RAO can be reached on 571-272-0939. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1656

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/Kagnew H Gebreyesus/  
Acting Examiner of Art Unit 1656  
September 29, 2010

/Manjunath N. Rao /  
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